

WHAT IS CLAIMED IS:

1. A method of controlling relative dimensions between an original pattern present in a mold and a recorded pattern formed in a surface of a wafer, said method comprising:

defining a region on said layer in which to produce said recorded pattern;

creating dimensional variations in said original pattern by subjecting said mold to tensional stresses, defining a varied pattern; and
recording said varied pattern in said layer.

2. The method as recited in claim 1 further including subjecting said wafer to tensional stress to produce contour said surface.

3. The method as recited in claim 1 further including bending said wafer to produce a contoured surface in said region, with said contoured surface and said mold having similar radii of curvatures.

4. The method as recited in claim 3 wherein bending said wafer further includes providing said contoured surface with an arcuate shape having a constant radius of curvature, with said mold conforming to said arcuate shape.

5. The method as recited in claim 3 wherein defining further includes defining a plurality of regions on said layer in which to produce said recorded pattern and bending further includes bending said wafer to provide a plurality of contoured surfaces, each of which

has a normal associated therewith centrally disposed therein, and creating further includes providing said mold with a curved profile that is radially and symmetrically disposed about an axis and successively orientating said axis to extend parallel to each said normal associated with each of said plurality of regions.

6. The method as recited in claim 1 wherein creating further includes providing said mold with a curved profile having a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape having a second radius of curvature.

7. The method as recited in claim 1 wherein said mold includes a first surface and a first neutral axis, separated therefrom a first distance, and said wafer includes a second surface and a second neutral axis, separated therefrom a second distance, with control of said dimensional variations being dominated by a greater of said first and second distances.

8. The method as recited in claim 3 wherein creating further includes providing said mold with a curved profile having a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape having a second radius of curvature, with said second radius of curvature matching said first radius of curvature.

9. The method as recited in claim 3 wherein creating further includes providing said mold with a curved profile that is radially and symmetrically

disposed about an axis to define a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape radially and symmetrically disposed about said axis to define a second radius of curvature.

10. The method as recited in claim 3 wherein creating further includes providing said mold with a curved profile that is radially and symmetrically disposed about an axis to define a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape radially and symmetrically disposed about said axis to define a second radius of curvature, with said second radius of curvature matching said first radius of curvature.

11. The method as recited in claim 3 wherein creating further includes providing said mold with a curved profile, while minimizing shear forces on said wafer, and bending further includes providing said contoured surface with an arcuate while minimizing shear forces on said wafer.

12. A method of controlling relative dimensions between an original pattern present in a mold and a recorded pattern formed in a layer of a wafer, said method comprising:

defining a region on said layer in which to produce said recorded pattern;

bending said wafer to produce a contoured surface in said region;

creating dimensional variations in said original pattern by bending said mold, defining a varied pattern, with said contoured surface and said mold having similar radii of curvatures; and

recording said varied pattern in said layer.

13. The method as recited in claim 12 wherein bending said wafer further includes providing said contoured surface with an arcuate shape having a constant radius of curvature, with said mold conforming to said arcuate shape.

14. The method as recited in claim 12 wherein defining further includes defining a plurality of regions on said layer in which to produce said recorded pattern and bending further includes bending said wafer to provide a plurality of contoured surfaces, each of which has a normal associated therewith centrally disposed therein, and creating further includes providing said mold with a curved profile that is radially and symmetrically disposed about an axis and successively orientating said axis to extend parallel to each said normal associated with each of said plurality of regions.

15. The method as recited in claim 12 wherein creating further includes providing said mold with a curved profile having a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape having a second radius of curvature.

16. The method as recited in claim 12 wherein said mold includes a first surface and a first neutral axis, separated therefrom a first distance, and said wafer includes a second surface and a second neutral axis, separated therefrom a second distance, with magnification control being defined by a greater of said first and second distances.

17. The method as recited in claim 12 wherein creating further includes providing said mold with a curved profile having a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape having a second radius of curvature, with said second radius of curvature matching said first radius of curvature.

18. The method as recited in claim 12 wherein creating further includes providing said mold with a curved profile that is radially and symmetrically disposed about an axis to define a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape radially and symmetrically disposed about said axis to define a second radius of curvature.

19. The method as recited in claim 12 wherein creating further includes providing said mold with a curved profile that is radially and symmetrically disposed about an axis to define a first radius of curvature, and bending further includes providing said contoured surface with an arcuate shape radially and symmetrically disposed about said axis to define a second radius of curvature, with said second radius of curvature matching said first radius of curvature.

20. The method as recited in claim 12 wherein creating further includes providing said mold with a curved profile, while minimizing shear forces on said wafer, and bending further includes providing said contoured surface with an arcuate while minimizing shear forces on said wafer.